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Information Society and Media Directorate General

Lisbon Strategy and Policies for the Information Society
Lisbon Strategy and i2010

Use of Computers and the Internet in Schools in Europe 2006

Country Brief: Spain

6 / 2006

Key findings

Almost all Spanish schools now use computers for teaching and have internet access. 81% use the internet via a broadband connection. With this figure Spain ranks at number 10 of the 27 countries participating in the survey.

However, just 48% of Spanish classroom teachers had used computers in class in the 12 months prior to the survey, with some variation across school types and between urban and rural areas.

Spanish teachers using computers use them mostly between 10% and 50% of their lessons and in these categories slightly more intensively than the European average.

The learning material that used most by Spanish teachers includes offline learning materials such as CD-ROMs. This applies to 87% of teachers.

A significant 32% of teachers in Spain still do not use computers in class. When asked for the most important barrier, 48% state a lack of computers in their schools as the most important barrier followed by "lack of adequate content/material" (23%).

Only a minority of 12% of teachers not using computers in class state that there are no or unclear benefits of using computers in class.

The lack of necessary skills to utilize computers in teaching (15%) and "lack of interest" of teachers (6%) both do not constitute a major barrier to a wider ICT uptake in Spanish schools as is the case in other countries.

This results in a situation where the statement "lack of equipment in school" is expressed by a substantial 15% of all Spanish teachers (32% non-users multiplied with 48% of teachers agreeing to this item).

There are very little differences with the European average when it comes to the barriers stated by teachers except for the fact that ICT skills and motivation for ICT use seem to be more positive in Spain.

Basically almost all schools are equipped with at least some computers in Spain, but it appears there is some room for improvement of the ICT equipment since there are still less than 10 computers available per 100 pupils in Spain and only 68% of the Spanish teachers use ICT in class.

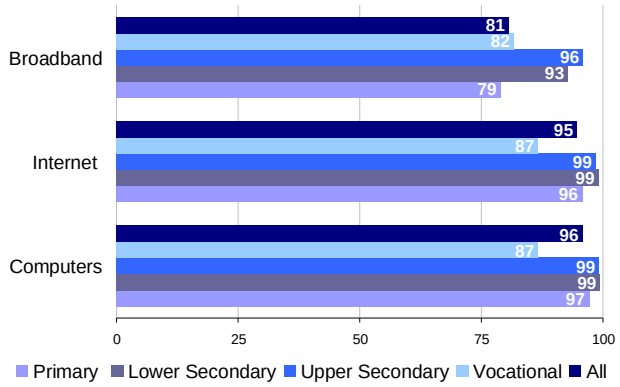
Spanish teachers are positive towards the different purposes for ICT use in teaching. Almost all teachers (93%) believe that teaching about office tools should be an integral part of the teaching process. With this figure, the country ranks top in Europe. The idea behind this is no doubt to quickly bring pupils up to speed in the use of some key software tools when using ICT.

While 12% of teachers in Spain report "lack of access" as an issue, 16% lack access and motivation to using ICT (compared to a EU25 average of 10%), a substantial 30% of Spanish teachers lack motivation for using ICT at all (compared to a EU25 average of just 14%). As a consequence, the ICT readiness of teachers in Spain – regardless of their competence and skills – appears to be low.

ICT Equipment and Internet in Schools

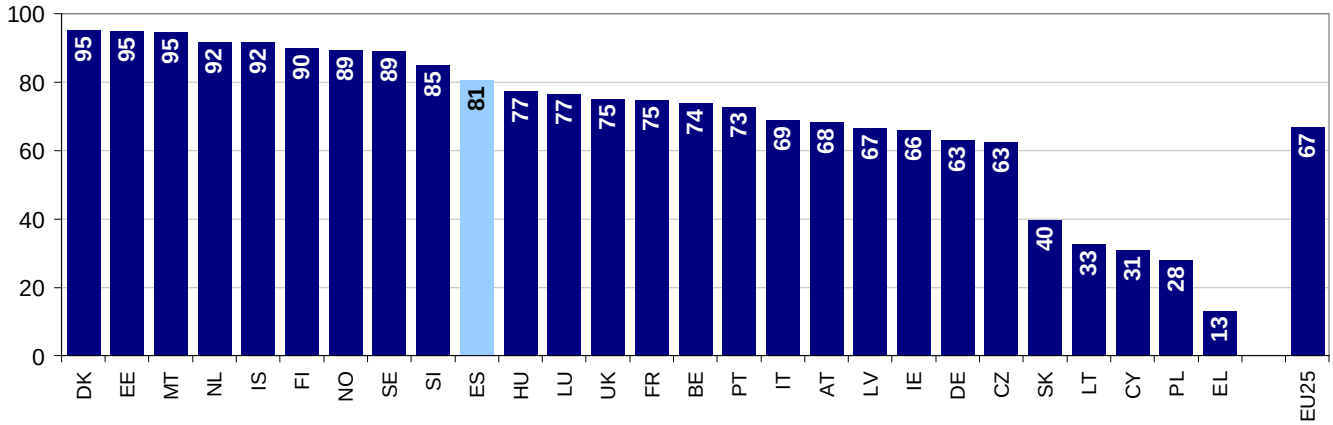
Almost all Spanish schools now use computers for teaching and have internet access. 81% use the internet via a broadband connection. With this figure Spain ranks at number 10 of the 27 countries participating in the survey. There is some variation between school types: while 79% of primary schools have a broadband internet connection, the penetration is highest among upper secondary schools, with 96%. There is also some variation with regard to broadband access between urban and rural areas: 82% of schools in densely populated areas have broadband access compared to 68% of schools in thinly populated areas.

Percentage of Schools Using Computers, Internet Connection, and Broadband Internet Access According to School Type in Spain 2006



Source: *LearnInd HTS 2006;* ***Base:*** *All schools;* ***Question:*** *Computers: Q6; Internet, Broadband: Q9. See questionnaire for exact wording.*

Percentage of Schools with Broadband Internet Access in Europe 2006



Source: *LearnInd HTS 2006;* ***Base:*** *All schools;* ***Question:*** *Q9. See questionnaire for exact wording.*

53% of schools have a website, 65% offer e-mail to teachers, and only 14% do so to pupils. Just 48% of the Spanish schools using computers for teaching use them in classrooms, with the highest percentage being achieved in primary schools (50%). Computers in the school library are mostly used in upper level schools.

There are only minor differences in the availability and use of ICT in schools with a broadband connection to the internet compared to those without.

The use of Computers and the Internet in Schools

Computers are used for various purposes and as part of teaching different subjects in schools but also and very widely as a separate subject.

Computer sciences are taught as a separate subject in almost 81% of Spanish schools with highest figures of almost 100% being achieved in both lower and upper secondary schools and in 85% of vocational schools, according to the statements made by the head teachers.

Just 48% of Spanish classroom teachers had used computers in class in the 12 months prior to the survey, with some variation across school types and between urban and rural areas. For most teachers, this includes not only using a computer for presentation purposes but also the use of computers by pupils in class.

Spanish teachers using computers use them mostly in 10-50% of their lessons and in these categories slightly more intensively than the European average.

14% state that they use computers in more than half of their lessons. Teachers in vocational schools use computers in class more frequently than their colleagues in general education, with 58% using computers in more than a quarter of their lessons.

ICT equipment in Spanish schools 2006

			Educational Level (ES)				Type of locality (ES)			Internet Access (ES)	
	Total ES	Total EU25	Primary	Lower secondary	Upper secondary	Vocational	Densely populated	Inter-mediate	Thinly populated	Narrow-band	Broadband
Computers per 100 pupils [a]	9.5	11.3	8.6	10.0	11.3	11.8	7.5	11.8	16.6	11.3	9.7
... of which internet connected	8.5	9.9	7.4	9.2	10.6	11.2	6.8	10.5	15.0	8.8	8.8
Percentage of schools having...											
Computers for teaching [b]	95.8	98.7	97.1	99.4	99.2	86.7	93.7	97.3	98.3	100.0	100.0
Internet access [c]	94.7	96.2	95.7	99.1	98.6	86.7	93.0	95.7	96.9	100.0	100.0
Broadband internet access [d]	80.7	66.9	79.0	92.8	95.9	81.6	86.7	82.5	67.6	0.0	100.0
A website [e]	53.2	63.0	51.6	62.8	75.8	60.4	53.3	51.5	54.7	53.4	56.7
An e-mail address for the majority of teachers [f]	65.1	65.2	66.4	66.3	69.3	58.1	62.9	64.6	69.7	73.5	67.9
An e-mail address for the majority of pupils [g]	14.2	23.5	14.0	17.4	15.0	18.4	11.6	11.6	21.3	11.7	15.5
A LAN [h]	80.1	55.2	79.5	87.2	89.9	80.9	78.5	79.8	83.1	80.8	85.2
An intranet [i]	35.0	40.8	32.1	39.4	57.8	40.3	35.9	32.3	35.6	39.1	36.6
An external support or maintenance contract [j]	49.0	47.1	50.4	56.8	53.7	45.7	51.0	46.7	47.6	37.1	54.4
Percentage of schools using computers for education in…											
Computer labs [k]	81.0	80.5	78.6	96.1	97.7	84.6	87.9	83.1	66.5	53.4	86.2
Classrooms [l]	47.6	61.4	49.9	35.9	38.8	48.4	43.0	46.7	56.7	61.0	45.0
School library [m]	40.0	33.4	31.7	50.3	65.0	65.7	41.4	45.0	32.8	35.1	41.3
Other locations accessible for pupils [n]	27.6	27.0	25.2	29.3	35.4	37.8	25.2	30.8	29.1	35.7	26.4

Source: *LearnInd HTS 2006;* ***Base:*** *a: all pupils; b-j: all schools, k-n: schools using computers for educational purposes for pupils (cf. index b);* ***Question:*** *a: Q4, Q6, Q7; b: Q6; c: Q9; d: Q9; e-j: Q12; k-n: Q8. See questionnaire for exact wording.*

Use of computers in class in Spain 2006

Assessments of the head teacher		Total ES	Total EU25	Educational Level (ES)				Type of locality (ES)			Internet Access (ES)	
				Primary	Lower secondary	Upper secondary	Vocational	Densely populated	Inter-mediate	Thinly populated	Narrow-band	Broadband
Computer sciences taught as separate subject	Agree	44.6	54.7	41.1	53.3	64.9	50.2	43.6	47.8	43.6	44.8	44.8
	Disagree	52.9	43.7	57.8	44.6	33.0	41.1	54.4	46.8	55.6	53.7	52.5
	Don't know	2.5	1.6	1.0	2.1	2.0	8.7	2.0	5.3	0.8	1.5	2.7
Computers and the internet are												
integrated into teaching of most subjects	Agree	79.9	75.3	82.6	78.2	79.0	71.6	80.3	74.4	83.9	69.7	81.7
	Disagree	17.8	24.1	15.6	19.4	20.0	23.3	17.7	20.9	15.2	28.8	16.0
	Don't know	2.3	0.6	1.8	2.3	1.0	5.1	1.9	4.7	0.9	1.5	2.3
used for teaching traditional subjects or basic skills	Agree	74.8	75.8	78.7	67.0	67.7	62.7	71.6	76.5	79.2	76.7	74.5
	Disagree	23.2	22.8	21.0	30.3	28.3	26.6	25.7	21.7	19.9	23.3	23.1
	Don't know	2.0	1.4	0.3	2.7	4.0	10.7	2.7	1.8	0.9	0.0	2.4
used for teaching foreign languages	Agree	76.8	56.6	79.7	77.0	76.5	64.6	73.5	74.6	84.7	83.0	76.5
	Disagree	19.8	40.1	17.9	18.9	21.6	27.3	23.5	18.1	14.8	17.0	19.4
	Don't know	3.4	3.3	2.5	4.1	2.0	8.2	3.1	7.3	0.6	0.0	4.1
used for coping with students with special needs/ handicaps	Agree	86.8	71.7	89.0	86.1	84.8	77.7	85.9	90.2	85.5	85.8	87.5
	Disagree	9.2	23.7	8.1	10.2	13.2	11.5	10.1	6.2	10.3	8.5	8.8
	Don't know	3.9	4.6	2.9	3.7	2.0	10.8	4.0	3.5	4.2	5.7	3.7

Source: *LearnInd HTS 2006;* ***Base:*** *All schools using computers for educational purposes for pupils;* ***Question:*** *Q13: "To what extent do you agree or disagree with the following statements regarding the educational use of computers and/or the internet in your school?"*

Spanish teachers using computers do not restrict themselves to a particular source of information but use a multitude of different material from a variety of sources for teaching purposes, which in most categories is above the European average. They are also very active (85%) in searching for material themselves in the internet. This shows a very proactive behaviour.

The learning material used most by Spanish teachers includes offline learning materials such as CD-ROMs. This applies to 87% of teachers. About 83% of teachers each use prefabricated pedagogical material from existing online sources but only 55% material that is made available on the schools' network and databases.

Not surprisingly, the older the teachers (indicator used here: years of teaching experience), the less use they make of computers and the internet in schools.

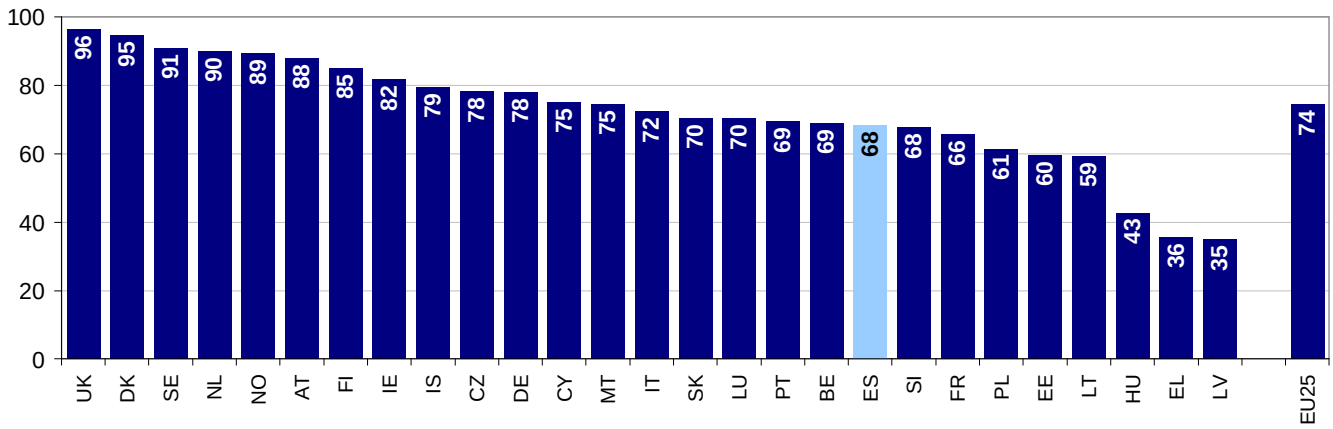
A significant 32% of teachers in Spain still do not use computers in class. When asked for the most important barrier, 48% state a lack of computers in their schools as the most important barrier followed by “lack of adequate content/material” (23%).

Only a minority of 12% of teachers not using computers in class % state that there are no or unclear benefits of using computers in class.

The lack of necessary skills to utilise computers in their teaching (15%) and “lack of interest” of teachers (6%), both do not constitute a major barrier to a wider ICT uptake in Spanish schools.

This results in a situation where the statement “lack of equipment in school” is expressed by a substantial 15% of all Spanish teachers (32% non-users multiplied with 48% of teachers agreeing to this item).

Percentage of teachers who have used computers in class in the last 12 months (2006)



Source: *LearnInd CTS 2006;* ***Base:*** *All teachers;* ***Question:*** *Q7. See questionnaire for exact wording*

Teachers' use of computers in class in Spain 2006

Percentage of teachers who ...	Total ES	Total EU25	Educational Level (ES)				Type of locality (ES)			Years of teaching experience (ES)			
			Primary	Lower secon-dary	Upper secon-dary	Voca-tional	Densely popu-lated	Inter-mediate	Thinly popu-lated	<5 y	5-9 y	10-19 y	20+ y
...have used computers in class[1]	68.2	74.3	68.9	66.6	65.5	67.5	63.4	67.8	77.5	72.5	73.4	69.9	64.4
...use a computer in class to present or demonstrate	61.7	63.4	61.3	62.6	61.6	62.7	57.2	63.1	68.9	62.2	67.7	63.2	58.4
...have pupils use a computer in class	60.1	66.3	61.6	57.7	56.4	58.7	55.8	57.9	70.2	60.4	60.2	64.7	57.0

Source: *LearnInd CTS 2006;* ***Base:*** *All teachers;* ***Question:*** *Q7 "How have you used computers and/or the internet for work in the last 12 months?"*

Frequency of computers use in class in Spain 2006

Percentage of all teachers *using computers in class* who ...	Total ES	Total EU25	Educational Level (ES)				Type of locality (ES)			Years of teaching experience (ES)			
			Primary	Lower secon-dary	Upper secon-dary	Voca-tional	Densely popu-lated	Inter-mediate	Thinly popu-lated	<5 y	5-9 y	10-19 y	20+ y
...use computers in 5% and less of all lessons	11.8	18.5	12.7	9.6	9.6	10.1	9.3	10.7	16.5	15.0	9.0	12.3	11.9
in 6 to 10% of lessons	20.2	22.5	21.8	20.6	16.2	14.2	19.8	16.1	24.0	16.8	19.5	24.0	18.5
in 11 to 24% of lessons	27.8	22.2	29.3	24.6	23.6	17.5	25.6	29.9	29.7	24.5	24.6	26.1	31.3
in 25 to 50% of lessons	26.1	20.2	25.1	30.1	28.6	30.3	27.5	28.8	21.9	22.2	30.9	26.5	24.6
more than 50% of lessons	14.1	16.5	11.2	15.1	22.0	27.9	17.9	14.6	8.0	21.5	16.0	11.1	13.8

Source: *LearnInd CTS 2006;* ***Base:*** *Teachers using computers in class, "don't know" answers excluded;* ***Question:*** *Q9 "For what percentage of time have you used computers and/or the internet in class when teaching your main subject(s) in the past 12 months?"*

There are very little differences with the European average except for the fact that ICT skills and motivation for ICT use seem to be at higher levels in Spain.

Basically almost all schools are equipped with at least some computers in Spain, but it appears there is some room for improvement of the ICT equipment since there are still less than 10 computers available per 100 pupils in Spain and only 68% of the Spanish teachers use ICT in class, mostly as a result of lack of computers.

Comparison of the situation in 2001 and 2006[2]

In Spain the percentage of schools using computers for educational purposes has risen over the past 5 years from an already high 88% in 2001 to 96% in 2006.

While in 2001 one hundred pupils had to share 7 computers the figure rose to 10 by 2006, a good improvement, although ICT use is still at a level below the European average of 12.

Schools have moved over to broadband. A good 69% (EU25: 45%) of the schools in Spain are connected to the internet via a DSL connection in 2006. The figure for 2001 was just 7% (EU15: 5%). The figures have strongly increased over the past 5 years.

Schools have also strongly increased the quality of ICT use: while in 2001 43% (EU15: 44%) of the schools in Spain had their own website, the figure is now 53% (EU25: 62%). Also the use of a LAN – which was used by 35% (EU15: 47%) of the Spanish schools – is now up to 80% (EU25: 54%).

Source of educational material used in class in Spain 2006

Percentage of all teachers *using computers in class*[3] who ...	**Total ES**	**Total EU25**	**Educational Level**				**Type of locality**		
			Primary	**Lower secondary**	**Upper secondary**	**Vocational**	**Densely populated**	**Inter-mediate**	**Thinly populated**
...use material they have searched the internet for	84.6	82.7	84.3	88.2	82.0	81.3	82.4	87.8	85.4
...use existing online material from established educational sources	83.0	74.2	84.9	83.6	80.6	77.8	81.8	85.3	83.2
...use material that is available on the school's computer network or database	55.3	63.1	60.0	49.9	51.0	52.3	55.3	53.5	56.8
...use electronic offline material (such as CD ROMS)	86.5	83.0	88.2	84.2	81.5	82.0	85.9	83.6	89.6
...use other learning material when using computers in class	2.6	8.8	1.5	2.7	5.5	6.2	3.6	1.8	1.5

Source: *LearnInd CTS 2006;* ***Base:*** *Teachers using computers in class;* ***Question:*** *Q10 "Which of the following types of materials have you used when teaching your main subject(s) with the aid of a computer and/or the internet?"*

Barriers to computer use in class in Spain 2006

Percentage of all teachers ***not*** *using computers in class*	Total ES	Total EU25	Educational Level				Type of locality		
			Primary	Lower secondary	Upper secondary	Vocational	Densely populated	Inter-mediate	Thinly populated
Lack of computers	48.3	48.8	47.8	48.1	49.2	46.4	48.6	48.7	47.1
Lack of adequate content/material	22.9	20.3	22.1	21.1	19.8	28.7	20.0	28.7	24.3
Lack of content in national language	8.8	8.6	11.3	10.0	2.5	1.5	8.1	10.8	8.3
Lack of adequate skills of teachers	14.7	22.5	15.0	11.6	10.4	6.6	12.7	15.1	20.0
No or unclear benefits	11.9	16.2	8.4	13.5	16.4	16.5	13.6	10.3	8.9
Lack of interest of teachers	6.1	8.9	6.8	6.6	7.5	4.9	6.8	4.9	5.5
Subject does not lend itself to being taught via computers	21.7	24.4	22.4	19.4	19.7	23.3	22.5	20.9	20.3
Other	26.8	21.3	27.8	31.3	24.7	18.8	27.7	28.2	22.1

Source: *LearnInd CTS 2006;* ***Base:*** *all teachers not using computers in class;* ***Question:*** *Q12: "Why do you not use computers and/or the internet when teaching in class?"*

Attitudes on the Usefulness of ICT use in Teaching

Computers and the internet have arrived in Spanish schools and their use is steadily improving. The share of teachers in Spain – but also in the European Union in general – who believe that computers and the internet should not at all be used in schools, is very low and below 1%. Spanish teachers have a positive attitude about the different applications for ICT in teaching and achieve high figures (all a good deal above the European average) on attitudes that ICT should be used for letting pupils do exercises and practise (91%), letting pupils retrieve information in a self-directed manner (97%) and for collaborative and productive work by pupils (82%). There are only minor differences across school types.

Almost all teachers (93%) believe that teaching about office tools should be an integral part of the teaching process. With this figure, the country ranks top in Europe. The idea behind this is no doubt to quickly bring pupils up to speed in the use of some key software tools when using ICT.

Access, Competence and Motivation for Using ICT and the Internet in Schools

Access

A majority of Spanish teachers are more or less satisfied with the technical access means at their schools: 74% state that their school is well equipped with computers and 81% express the opinion that their internet connection is fast enough. However, 64% wish there were better support and maintenance actions taken. In terms of content a high 44% state problems with respect to finding adequate learning materials and 40% argue that existing material are of poor quality.

Competence in using ICT

Spanish teachers feel most competent in using e-mail and using a text processor programme but are less confident with downloading and installing software and with using presentation software packages. There are hardly any differences according to school type.

Attitudes on the Usefulness of ICT use in Teaching in Spain 2006

Percentage of teachers saying computers/internet should be used for …	Total ES	Total EU25	Educational Level				Type of locality		
			Primary	Lower secondary	Upper secondary	Vocational	Densely populated	Inter-mediate	Thinly populated
Letting pupils do exercises and practise	90.7	79.9	91.0	90.8	90.2	86.8	91.6	87.3	92.2
Letting pupils retrieve information in a self-directed manner	93.5	85.0	93.3	94.3	93.3	93.5	94.0	91.1	94.7
Teaching about office tools	92.3	61.3	92.8	93.3	91.9	89.3	92.5	88.4	95.4
Collaborative and productive work by pupils	82.4	80.5	82.3	85.0	81.7	80.9	82.8	81.1	82.9
Computer/internet should not be used for any of these in teaching	0.6	0.6	0.6	0.8	0.6	0.6	0.3	1.4	0.4

Source: *LearnInd CTS 2006;* ***Base:*** *all teachers;* ***Question:*** *Q13: "What do you think for what computers and the internet should be used for in teaching?"*

Teachers' access, competence and motivation for using ICT in class 2006

Percent of teachers agreeing or strongly agreeing:	Total ES	Total EU25	Educational Level: Primary	Lower secondary	Upper secondary	Vocational	Subject of teaching: General primary	Literature and languages	Humanities and social sciences	Science, maths, computer sciences	Physical, artistic, crafts education	Vocational education
Access												
Our school is well equipped with computers [a]	73.9	74.2	73.1	77.2	80.0	78.2	*58.6**	70.3	81.2	77.3	67.1	80.2
The internet connection we have is sufficiently fast [b]	81.2	77.2	80.2	83.2	85.3	85.8	*65.9**	79.6	88.0	82.4	77.0	90.6
Better technical maintenance and support is required in our school [c]	63.8	64.8	63.8	60.8	61.2	59.3	*77.5**	65.3	55.2	64.7	65.3	47.3
Existing teaching materials on the Internet are of poor quality [d]	40.3	29.9	40.4	39.2	41.4	42.3	*27.9**	38.1	41.0	42.0	45.8	47.4
It is hard to find adequate learning materials for teaching [e]	44.0	38.7	42.3	43.4	44.1	49.5	*49.1**	40.9	36.0	47.3	47.2	39.6
Motivation												
Pupils are more motivated and attentive when computers and the internet are used in class [f]	88.7	86.3	90.3	87.5	85.8	84.1	*87.9**	88.0	86.2	90.2	88.2	96.1
Using computers in class does not have significant learning benefits for pupils [g]	52.3	20.7	51.3	53.6	56.2	53.6	*57.8**	53.5	55.5	49.5	47.9	49.9
Competence												
Teachers in our school do not have sufficient computer skills [h]	48.2	42.0	49.8	45.9	46.1	45.8	*55.4**	49.7	38.1	48.7	48.2	40.8
Competence / computer skills (Percentage of teachers who feel very confident at…)												
Using text processors [i]	62.1	65.0	58.5	67.8	72.0	71.9	*61.1**	55.1	60.0	67.7	63.6	*67.0**
Creating electronic presentations [j]	34.3	34.0	30.7	45.2	45.5	41.8	*31.3**	21.7	29.8	39.7	40.8	*33.4**
Using e-mail [k]	65.1	65.9	61.1	71.8	76.0	75.8	*55.2**	61.3	65.2	66.1	67.7	*75.4**
Downloading and installing software [l]	38.3	35.8	34.7	45.4	49.4	41.5	*25.6**	27.5	35.8	43.6	44.6	*39.6**

Source: *LearnInd CTS 2006;* ***Base:*** *a-h All teachers; i -l Teachers using computers in class* ***Question:*** *a-h Q14, i-l Q11.* ***Notes:*** *"xx.x*": based on at least 10 and less than 50 cases.*

Motivation for ICT use in Schools

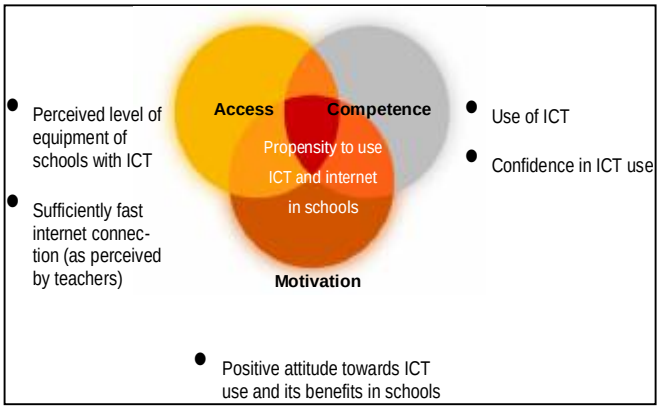
Over 89% of Spanish teachers see significant learning benefits for pupils using computers in class and state that pupils are more motivated and attentive when computers and the internet are used in class.

ICT Readiness of Teachers – the ACM Model

The ACM model as developed by Viherä and Nurmela (2001)[4] was applied in LearnInd to generate a typology according to the "propensity to the use of computers and internet by teachers in classroom situations at schools".

The typology in the figure below takes account of the three main categories of preconditions which need to be given for a school to make use of computers and the internet in the teaching process in classrooms, computer labs etc.

The Access-Competence-Motivation Model



These are: access (to computers and the internet at school), competence (in using the computer software and the internet, and applying it for teaching purposes), and motivation (gauged through the attitude that using computers in classrooms results in significant learning benefits).

Any attempt to group the classroom teachers according to their propensity to becoming users of computers and the internet in their teaching processes needs to take account of these three dimensions. In the present application of the ACM model data from the Classroom Teacher Survey (CTS) was used. Therefore "access" for instance is to be understood as a perceived level of computer equipment at schools and teachers' satisfaction therewith rather than an objective measure of equipment status.

Access, Motivation and Competence of Teachers for Using ICT in Schools in Spain 2006

ES	EU25	Access	Competence	Motivation
6.0	4.3	~~Access~~	~~Competence~~	~~Motivation~~
7.1	3.9	**Access**	~~Competence~~	~~Motivation~~
15.7	9.7	~~Access~~	**Competence**	~~Motivation~~
2.0	5.0	~~Access~~	~~Competence~~	**Motivation**
29.6	13.7	**Access**	**Competence**	~~Motivation~~
3.2	4.8	**Access**	~~Competence~~	**Motivation**
11.9	20.7	~~Access~~	**Competence**	**Motivation**
24.5	37.9	**Access**	**Competence**	**Motivation**
100	100			

Percentage of teachers. ***Source:*** *LeanInd CTS 2006;* ***Base:*** *All teachers;* ***Question:*** *See endnote* [5]

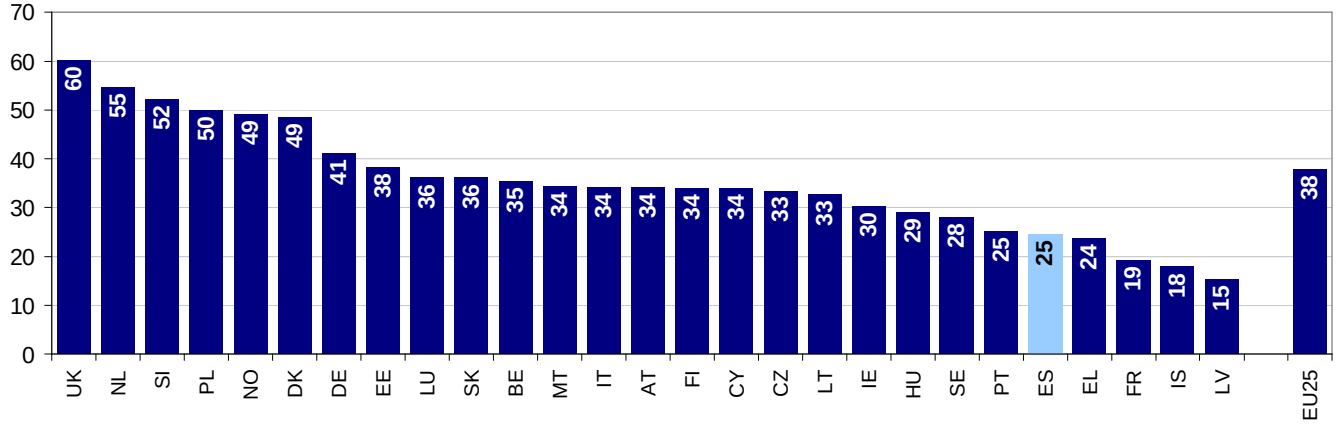
38% of European teachers dispose of sufficient access to the internet at school, the necessary competence in using ICT in class and are motivated to its use. With just 24% of the teachers belonging to this group, Spain ranks at

15th, placing the country just in the second half of European countries. Overall the UK with 60% ranks top and Latvia with 15% finds itself at the very end.

The as yet insufficient internet connection in many schools and a lack of motivation of teachers for using ICT are the most critical issues for a wider uptake of computers and the internet in schools in Europe. 20% of European teachers indicate insufficient computer equipment and the low speed of internet connection at their school as a key barrier. 14% show a lack of motivation, i.e., they are of the opinion that using computers in class does not result in significant learning benefits.

The situation in Spain is different: while 12% report "lack of access" as an issue, 16% lack access and motivation to using ICT (compared to a EU25 average of 10%), a substantial 30% of Spanish teachers lack motivation for using ICT at all ICT (compared to a EU25 average of just 14%). As a consequence, the ICT readiness of teachers in Spain is low.

ICT Readiness of Teachers in Spain: Percentage of Teachers Fully Ready to use Computers in Class (ACM Indicator) 2006



Source: *LeanInd CTS 2006;* ***Base:*** *All teachers.* ***Question:*** *See endnote 5*

ANNEXES

Methodology Report

Universe / Sample population

In order to assure the comparability of school levels in all countries UIS-OECD-EUROSTAT "Mapping of national education programmes to ISCED 97 for school academic/year 2002/2003" [6] was used for composing the sample frame. Based on this, each country divided its school system into ICSED codes and made different combinations that existed in its country.

Sampling frame and method

The sample was composed using official databases, which contained contact data of schools. In the majority of countries the sample was drawn from a database received from the Ministry of Education.

For each country a separate template of sample frames was composed by TNS Emor. These templates contained data about school types across regions as well as location type. School types were defined based on the ISCED codes provided in UIS-OECD-EUROSTAT. Location type distribution was made according to the Eurostat type of locality classification which differentiates densely populated, intermediate and thinly populated municipalities[7]. Apart from that, each country was divided into 3-7 regions depending on the size of a country.

Based on the data provided by countries, TNS Emor composed quotas for each country. Two level stratification was used – quotas for first stage, random sample for second. The quotation for region by school type and location type was endorsed. Simple random selection was conducted by the local agency or the local source of the contact base. Both private and public schools were included in the sample. It was also obligatory to include schools of other teaching languages than the official language of a country in the sample.

Simple random sampling was used inside a quota cell. This means that if the quota for primary schools in region1 was 100 and the total number of primary school in this region was 800, then a random sample selection was be made among those 800 schools. This covered also both private and public schools and schools of other teaching languages than the official language of a country.

No more than 50% of interviews could be made in one school level. At least 10% of respondents had to be from schools which provided professional/vocational or combined programme of vocational and upper secondary level education (in case a country did not have special quota for those schools). It did not matter whether vocational education level was coded as ISCED 3 or ISCED 4.

There were no duplications in samples of head teacher and classroom teacher surveys. This was only allowed in countries with small universe sizes (e.g. Malta, Cyprus, Iceland, Estonia, Latvia etc) and in cases where the last quota cells were very difficult to achieve or there were not enough schools of a certain type. The priority was to include as many different schools as possible. In both surveys, 5 attempts were made before giving up and only if the respondent refused was this person not contacted again.

The CATI programme generated a randomly chosen letter. The interviewer asked for the person with a surname that started on the generated letter. If there was more than one teacher whose surname started with the selected letter, the person who was first alphabetically was chosen. If the correct person was not available, an appointment was made. At least 5 attempts were made, before taking another teacher.

Only in Malta, due to instructions dictated by the Education Department, would the Head Teacher randomly select a teacher who would be available for an appointment during which they would be interviewed.

Number of interviews conducted (HTS / CTS)

Country		Head Teachers	Classroom teachers
BE	Belgium	450	807
CZ	Czech Republic	500	1000
DK	Denmark	315	848
DE	Germany	450	901
EE	Estonia	400	851
EL	Greece	500	1000
ES	Spain	518	1022
FR	France	501	869
IE	Ireland	403	626
IT	Italy	500	900
CY	Cyprus	150	600
LV	Latvia	451	902
LT	Lithuania	457	908
LU	Luxemburg	82	277
HU	Hungary	500	1000
MT	Malta	100	200
NL	Netherlands	515	890
AT	Austria	320	450
PL	Poland	500	1000
PT	Portugal	450	900
SI	Slovenia	253	460
SK	Slovakia	502	1000
FI	Finland	318	601
SE	Sweden	200	450
UK	United Kingdom	450	905
IS	Iceland	177	424
NO	Norway	494	708
TOTAL		**10456**	**20499**

Fieldwork

Fieldwork was coordinated by the TNS Emor and conducted in cooperation with its local TNS offices excluding Iceland, Cyprus, Austria, Slovenia and Malta where TNS does not have offices. In these countries partners with whom TNS had previous experience were used.

Pilot interviews prior to the regular fieldwork were conducted with 20 schools in both target groups in Estonia and Greece in February 2006, in order to test the questionnaire (structure, comprehensibility of questions).

Between March and April 2006, surveys among head teachers (head teacher survey - HTS) and classroom teachers (CTS) were carried out in 27 European countries. TNS Emor was responsible for the fieldwork.

Weighting schemes

After the fieldwork, weighting coefficients were computed using region, location type and school type.

Statistical accuracy of the survey: confidence intervals

Statistics vary in their accuracy, depending on the kind of data and sources. A "confidence interval" is a measure that helps to assess the accuracy that can be expected from data. The confidence interval is the estimated range of values on a certain level of probability of error. Confidence intervals for estimates of a population fraction (percentages) depend on the sample size, the probability of error, and the survey result (value of the percentage) itself. Further to this, variance of the weighting factors has negative effects on confidence intervals.

The calculation of confidence intervals is based on the assumption of (quasi-) infinite population universes. In practice, however, in some countries and for some school levels the complete population of schools consists of only several hundred or even a few dozen of schools. In some cases, literally each and every school within a country-school type cell was contacted and asked to participate in the survey. This means that it is practically impossible to achieve a higher confidence interval through representative school surveys in which participation is not obligatory.

Country Background Data

With a population of 40, 977 million people, Spain belongs to the larger European countries, has a low fertility rate and a low annual population growth rate. 14% of the population is aged 14 and younger, which is at the tail end in Europe. A high proportion of the GDP is spent on secondary education.

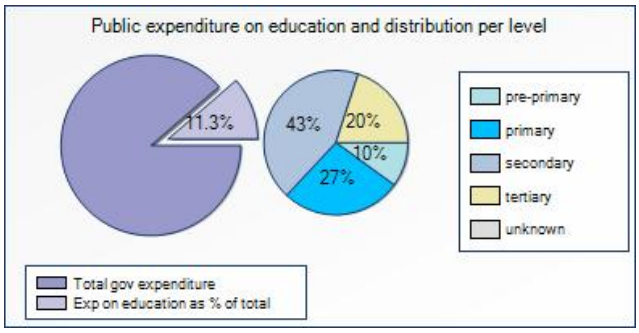
General Population Data for Spain 2002/03[8]

Total population (000)	40,977
Annual population growth rate (%)*	0.4
Population 0-14 years (%)	14
Rural population (%)*	22
Total fertility rate (births per woman) *	1.3
Infant mortality rate (0/00) *	4
Life expectancy at birth (years) *	79
GDP per capita (PPP) US$ *	21,599
GDP growth rate (%)*	2
* World Bank World Development Indicators	

Resources for Education in Spain 2002/03

Pupil / teacher ratio (primary)	14
Public expenditure on education :	
as % of GDP	4.5
as % of total government expenditure	11.3
Distribution of public expenditure per level (%):	
pre-primary	10
primary	27
secondary	43
tertiary	20
unknown	0

Resources for Education in Spain 2002/03



The Educational System in Spain[9]

The total population registered in Spain by 31 December 2004 was 42,935,001, according to data from the National Institute of Statistics. 50.8% of the population is female. The number of people under 24 years of age amounts to 11,509,228 (26.8% of the population), of which 48.7% are females.

According to data from the Ministry of Education and Science, there are 8,430,939 pupils in the 2004/05 academic year including all educational levels. Spanish citizens must know the language and have the right to use it. Together with *Castellano*, there are other official languages in their corresponding Autonomous Communities. These co-official languages are *Catalán, Gallego, Valenciano* and *Euskera*. In those Communities where there is a co-official language both this and *Castellano* are considered compulsory teaching languages at all non-university educational levels.

The use of the Autonomous Community language as a teaching language varies in the different Communities, depending on how widespread that language is and on the linguistic policies each Community is implementing.

In the 2004/05 academic year, the overall number of pupils enrolled in all educational levels (71.6%) is in public education. The central government retains responsibility for the general regulation of the system, but since 1978 most responsibilities have been devolved to the 17 regional governments (Autonomous Communities). Society's participation in education is essential to the Spanish education system. School Councils, both on the state and regional and on the local and individual school levels, are created to encourage the participation and consulting of the social groups involved in non-university education.

The State School Council is the national body for social participation in the general planning of education and for advice regarding bills or regulations proposed or announced by the government. Each publicly financed establishment has a school council, which is the participatory body for the control and management of the establishment of the different sectors who constitute the educational community. It comprises the management team, representatives from the teachers, pupils, parents, administrative and service personnel and, in the case of private establishments financed with public funds, representatives from the ownership of the establishment. The school council has, among others, the following functions: deciding upon pupil admission, approving the budget of the establishment, analysing its functioning, and being informed about the proposal to the education authorities of the appointment or dismissal of the management team members.

The University Coordination Council is the nationwide advisory and participatory body for the State level in higher education. In addition, each university has its own Social Council, in addition to other complementary channels for participation.

The education Senior Inspection service monitors the structure and organization of education and a technical inspection service operates in each of the Autonomous Communities, and guarantees compliance with the rules laid down by the State, as well as with legislation in general, ensuring the fulfillment of the basic conditions for guaranteeing equity for all Spanish citizens in the exercise of their educational rights and duties. Each Autonomous Community is responsible for the organization and functioning of its own technical inspection service, for all the establishments, services, programmes, and activities for both public and private establishments.

The use of ICT in Education[10]

For the development of ICT in education the programme "Internet en el Aula" (Internet in the Classroom") has been established. A budget of €453.5 million has been assigned to this action plan for the period 2005-2008. This programme includes a wide range of actions addressed to the whole educational community.

The Ministry of Education and Science has proposed the Consejo General de la Formación Profesional [Vocational Training Council] – the Ministry of Labour and Social Affairs, the Autonomous Regions and the social agents – the development of state-controlled a lifelong learning strategic plan.

The Development of the C-TEST programme dealing with the implementation of information and communication technologies (ICT) aimed to improve access of low qualified women to education and training, as well as training programmes on Telecommunication (FORINTEL) designed to improve the workers' abilities, qualification and adaptation to changes in the labour market.

The Study

There is a lack of information on the actual use of ICT for learning in schools and for supporting political action in potential future programmes. It is necessary to clarify matters such as the educational vision of heads of schools, the current impact of ICTs on teachers' practice, support and training and on other factors for success in e-learning.

The objective of the study is to obtain estimates for the eEurope 2005 indicator on e-learning "number of pupils per computer with Internet connection (broadband/non-broadband)" and relate it to other possible indicators of educational use of ICT in compulsory education (e-learning in schools). The study looks at how Information and Communication Technologies (ICT) are used in schools.

The study is a continuation of the earlier benchmarking exercise for eEurope 2002.

It involved two surveys. Firstly of head teachers to obtain information on the schools and then of teachers to focus on their use of ICTs in the teaching process

This exercise is part of the Information Society monitoring and benchmarking process for which the Commission in cooperation with the Council defined benchmarking indicators.

Country Briefs

This document has been prepared by **empirica** based on own desk research and the above mentioned primary data sources: Head Teacher Survey (HTS) 2006 and Classroom Teacher Survey (CTS) 2006 in the EU25 member states, Iceland and Norway.

Altogether 27 LearnInd Country Briefs are available in a common format, one for each member of the enlarged European Union, Norway and Iceland.

A final report has also been developed. It includes approximately 100 exhibits, more than 250 data tables and a report about the key results.

You can access and download these documents in PDF format (for free) from http://ec.europa.eu/information_society/eeurope/i2010/benchmarking/index_en.htm.

More information

Check our results and achievements on: http://ec.europa.eu/information_society/eeurope/i2010/benchmarking/index_en.htm. If you wish to be provided with more details, or to receive news and updates, please contact us at: **learnind@empirica.com** or get in touch with us.

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1 Note that "in class" means during lessons while teaching and does not denote a particular location such as a classroom.

2 This section includes some comparisons of the Eurobarometer Flash 94/1001 and 95/102 results from 2001 with those from the LearnInd surveys from 2006. Please bear in mind that the figures are not directly comparable due to the use of slightly different approaches and methodologies.

[3] Base (100%) = all teachers who have used a computer in class in the last 12 months.

[4] Viherä, M-L, Nurmela, J (2001) "Communication Capability Is an Intrinsic Determinant for Information Age", in Futures, Volume 33, Issue 3-4:245-265.

[5] Synthetic indicators: Access: Q14 (2) "Our school is well equipped with computers" and Q14 (3) "The internet connection we have is sufficiently fast ".

Competence: Q11 How confident do you feel... a) using a text processor, b) creating a presentation c) using e-mail, d) downloading and installing software. Threshold: Average of 2.5 or more on a 1-4 confidence scale

Motivation: Q14 (8); disagree with "Using computers in class does not result in significant learning benefits".

For full question wordings refer to questionnaire.

[6] http://forum.europa.eu.int/Public/irc/dsis/edtcs/library?l=/public/unesco_collection/programmes_isced97&vm=detailed&sb=Title

[7] Densely populated area refers to a set of closely related local units, each one of which having a density greater than 500 inhabitants per km2, and the total population of which being of at least 50 000 inhabitants; Intermediate area refers to a set of closely related local units that do not pertain to a densely populated area, each one of which having density greater than 100 inhabitants per km2, and where the total population is at least of 50 000 inhabitants or it refers to a set that is adjacent to a highly populated area. Thinly populated area (rural): refers to a set of closely related local units that are not part of a densely populated area, or of an intermediate area. (A set of local areas totalling less than 100 km², not reaching the required density, but entirely enclosed within a densely-populated or intermediate area, is to be considered to form part of that area. If it is enclosed within a densely-populated area and an intermediate area it is considered to form part of the intermediate area).

[8] Source: http://www.uis.unesco.org/profiles/selectCountry_en.aspx (visited 28 March 2006)

[9] Source: http://www.eurydice.org/Documents/struct2/frameset_EN.html (visited: 28 March 2006)

[10] Source: http://europa.eu.int/comm/education/policies/2010/nationalreport_en.html (visited: 9 May 2006)